

MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories

Michigan Department
of Community Health



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New updates in this issue:

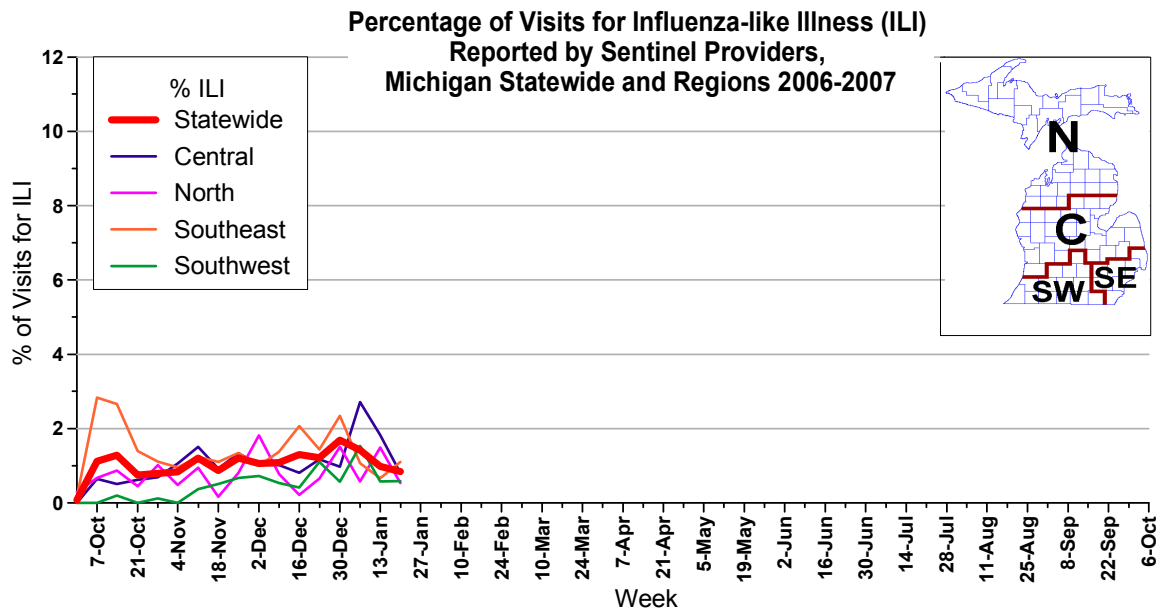
- **Michigan Surveillance:** The decrease in influenza activity leads to a drop back to "Sporadic" levels.
- **National Surveillance:** Activity slightly increased; patterns seen may be due to holiday season.
- **Avian Influenza:** Human deaths in Egypt and Indonesia; poultry outbreaks in multiple countries.

Michigan Disease Surveillance System: The last week has seen an increase aggregate flu-like illness reports; however, there was a slight decrease in individual influenza reports to the local health departments. The current flu-like illness reported levels are comparable to that seen at this time last year.

Emergency Department Surveillance: Emergency department visits due to both respiratory and constitutional complaints have continued to decrease this past week, coming down off of a recent period of elevated activity. These levels are slightly higher but not inconsistent with levels reported at this time last year. Three constitutional alerts in Regions 5(1), 6(1) and 7(1) and three respiratory alerts in Regions 5(1) and 7(2) were generated last week.

Over-the-Counter Product Surveillance: OTC product sales seem to reflect an increase in activity in the past week. Sales have remained relatively steady (children's electrolytes, pediatric cold relief liquids) or had a slight increase in sales. However, the indicators levels are comparable to those seen at this time last year, except for the adult and pediatric cold relief liquid, which seem to be holding about 1-2% below its percentage of total sales for this time last year.

Sentinel Surveillance (as of January 25): During the week ending January 20, 2006, the proportion of visits due to influenza-like illness (ILI) in the state decreased for the 3rd consecutive week to 0.8% of all visits, representing 59 cases of ILI out of 6984 total patient visits; twenty-nine sentinels provided data for this report. On a regional level, the percentage of visits ranged from 0.8%, Central; 0.5%, North; 1.1% Southeast; and 0.6% Southwest. Note that these rates may change as additional reports are received.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage and recommend year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Rachel Potter at 517-335-9710 or potterr1@michigan.gov for more information.

Laboratory Surveillance (as of January 25): For the 2006-2007 influenza season, there have been 48 culture-confirmed cases from the MDCH Lab:

- 36 A:H1N1 (SE(12), SW(13), C(7), N(4))
- 1 A:H1, N pending (SE)
- 1 A:H3N2 (Southeast)
- 10 B (Central (3), Southeast (3), Southwest (3), North (1)).

All influenza B cultures have been B/Malaysia. Overall submission activity is light. Sentinel laboratories in the Southeast and Southwest reported low, decreasing numbers of positive tests; sentinel labs from the Central region are reporting low numbers of positives, and the North region labs are reporting no positives. Low levels of parainfluenza, adenovirus and respiratory syncytial virus are being reported as well.

Comparing to previous years, the MDCH lab reported 42 A's and 7 B's on January 13, 2005 and 11 A's and 2 B's on January 20, 2006.

***As a reminder, the positive predictive value of influenza rapid tests decreases during times of low influenza prevalence. MDCH suggests that during periods of low influenza activity in your community, all positive rapid tests results be confirmed by sending in a specimen for viral culture; this can be arranged through your local health department.

Influenza-Associated Pediatric Mortality (as of January 25): For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality in Michigan.

***Reminder: The CDC has asked all states to continue to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child less than 18 years of age resulting from a clinically compatible illness confirmed to be influenza by an appropriate laboratory or rapid diagnostic test, but also unexplained death with evidence of an infectious process in a child. Refer to http://www.michigan.gov/documents/fluletter_107562_7.pdf for the complete protocol. It is important to immediately call or fax information to MDCH to ensure that appropriate clinical specimens can be obtained.

Congregate Settings Outbreaks (as of January 25): No reports were received during the past week. There have been no reports of influenza outbreaks to MDCH for the 2006-2007 influenza season.

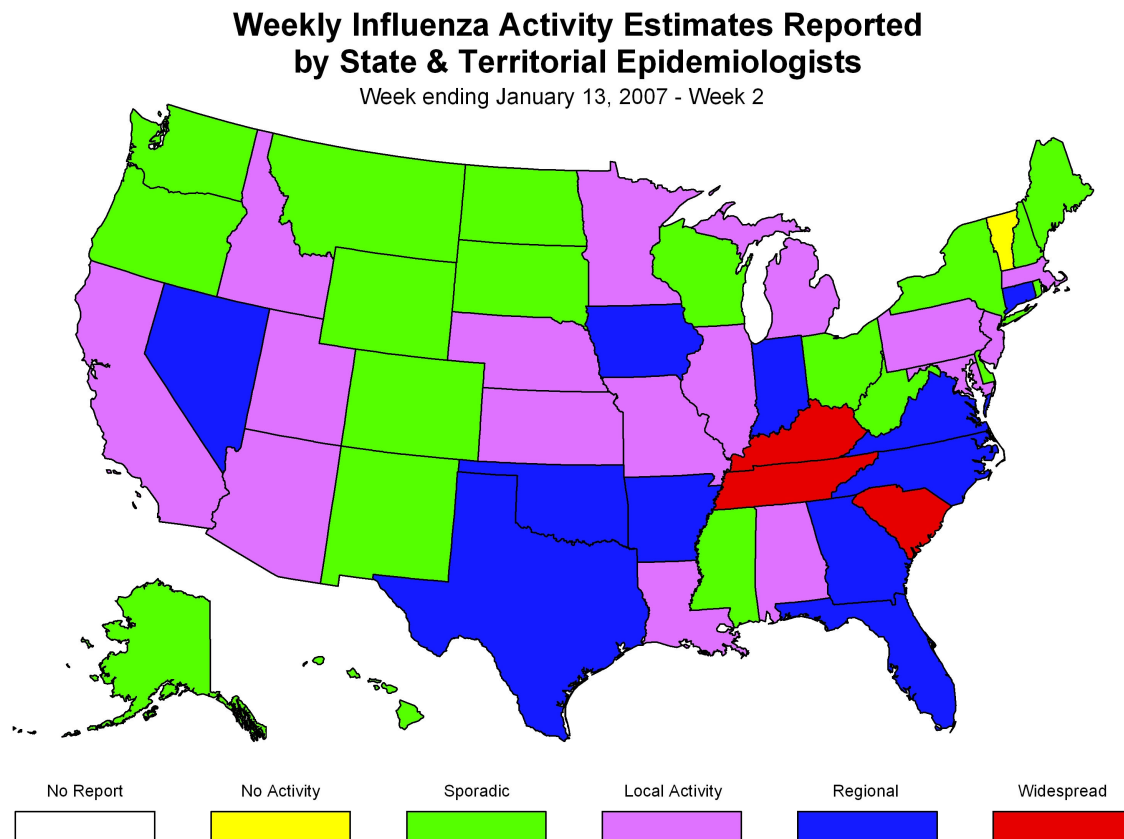
National (Reuters, January 23): Infants and toddlers given two doses of the influenza vaccine are less likely to contract flu, pneumonia and influenza-like illnesses, but one dose does not appear to have any effect, according to findings published in the Journal of Pediatrics. Dr. Mandy A. Allison, of the University of Utah, Salt Lake City, and colleagues examined the effectiveness of the currently recommended two-dose influenza vaccine for young children, as well as the effect of one dose of the vaccine, in preventing visits to the doctor for influenza-like illness.

They analyzed data for 5193 healthy children between the ages of 6 and 21 months who were seen at five Denver pediatric practices during the 2003-2004 flu season. The average age of the children was 15.5 months. The kids were defined as being partially vaccinated if they had one shot more than 14 days before the first influenza-like illness visit, and fully vaccinated if they had the full two shots more than 14 days before the first visit. Overall, 28 percent of the children were seen for influenza-like illness and 5 percent had a visit for pneumonia/influenza.

Full vaccination was 69 percent effective in preventing office visits for influenza-like illness and 87 percent effective in preventing office visits for pneumonia/influenza. This is comparable to the effectiveness of the vaccine in adults. However, the partially vaccinated children were just as likely to be seen for influenza-like illness or pneumonia/influenza as were unvaccinated children. The results confirm the effectiveness of two doses of flu vaccine and "lend support to the recommendation for universal immunization against influenza in 6- to 23-month-old children," Allison's team concludes.

National (CDC, January 19): During week 2 (January 7 – January 13, 2007), laboratory surveillance data indicated a slight increase in influenza activity in the United States from week 1 to week 2. During week 2, WHO and NREVSS laboratories reported 3,070 specimens tested for influenza viruses, 265 (8.6%) of which were positive: 63 influenza A (H1) viruses, five influenza A (H3) virus, 149 influenza A viruses that were not subtyped, and 48 influenza B viruses. The proportion of visits for influenza-like illness may have been influenced by changes in healthcare seeking patterns during the holiday season as has been seen in past seasons. ILI data was at baseline for week 2. Three states reported widespread influenza activity; 12 states reported regional influenza activity; 16 states reported local influenza activity; 18 states, the District of Columbia, and New York City reported sporadic influenza activity; and one state reported no influenza activity. The reporting of widespread or regional influenza activity decreased from 16 states for week 1 to 15 states for week 2. The percent of deaths due to pneumonia and influenza remained below baseline level.

To access the CDC weekly surveillance report throughout the influenza season, visit <http://www.cdc.gov/flu/weekly/fluactivity.htm>.



International (WHO, as of January 16): During weeks 51-52 of 2006, overall seasonal influenza activity worldwide remained low, except in the United States, where widespread activity was reported. In Canada, localized activity of influenza A was reported in parts of Canada during weeks 51-52, with an overall influenza-like illness (ILI) consultation rate below the expected range for the time of year. In New Caledonia, an increase of influenza A(H3N2) activity was observed during week 51 for the first time in the past 3 months. Activity was reported as localized. Localized activity of influenza A(H1) was observed in parts of Norway. Regional activity of influenza A continued to be reported in northern part of Sweden. In the United States, influenza activity increased during weeks 51-52 and was reported as widespread. The overall ILI consultation rate was above the national baseline, but the percentage of deaths due to pneumonia and influenza remained below the baseline level. During week 52, 82% of the influenza viruses detected were influenza A and 18% influenza B. Of the A viruses subtyped, 95% were influenza A(H1) and 5% A(H3) viruses.

During weeks 51–52, low influenza activity was reported in Bulgaria, France (H3 and A), Greece (H3), Hong Kong, Special Administrative Region of China (H1, H3 and B), Islamic Republic of Iran (H3 and B), Italy (H3), Japan, Madagascar (B), Mongolia, Portugal (H3), Romania, Russian Federation (H1, H3 and B), Switzerland (H3), Tunisia (H1) and the United Kingdom (H1 and H3). Argentina, Austria, Croatia, Denmark, Finland, Latvia, Mexico, Poland, Senegal, Slovenia, Spain and Ukraine reported no influenza activity.

MDCH reported **SPORADIC ACTIVITY** to the CDC for this past week ending January 20, 2007.

End of Seasonal Report

Avian Influenza Activity

WHO Pandemic Phase: Phase 3 - Human infection(s) with a new subtype, but no human-to-human spread or rare instances of spread to a close contact.

International, Human (WHO, January 22): The Egyptian Ministry of Health and Population has announced a new human case of avian influenza A(H5N1) virus infection. The case was confirmed by the Egyptian Central Public Health Laboratory and by the US Naval Medical Research Unit No.3 (NAMRU-3). The 27-year-old woman from Beni Sweif Governate developed symptoms on January 9th and died in the hospital on January 19th. Initial investigations indicate the presence of sick and dead poultry at her residence in the days prior to the onset of illness. Of the 19 cases confirmed to date in Egypt, 11 have been fatal.

International, Human (WHO, January 22): The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. A 26-year-old woman from West Java Province developed symptoms on January 11th and died in the hospital on January 19th. Initial investigations of the source of her infection indicate that the woman had been involved in the slaughter of sick chickens in the days prior to symptom onset. Of the 80 cases confirmed to date in Indonesia, 62 have been fatal.

International, Human (WHO, January 18): Viruses with a genetic mutation, linked in laboratory testing to moderately reduced susceptibility to oseltamivir, have been discovered in two persons [previously reported](#) with H5N1 infections in Egypt. Both patients had been on treatment with oseltamivir for two days before the clinical samples that yielded the viruses were taken.

The two patients from whom samples were taken were a 16 year-old female and a 26 year-old male from Gharbiyah Province, Egypt. They were a niece and uncle, respectively, who lived in the same house. The girl was admitted to a hospital on December 19, 2006, while the man was admitted on December 17th. On December 21st they began receiving 2 tablets per day of oseltamivir. On December 23rd they were moved to a referral hospital. The samples which have so far been tested were taken from the two patients on December 23rd. The girl died on December 25th and the man died on December 28, 2006.

In this and all other H5N1 investigations there is close, ongoing coordination between Egypt's Ministry of Health and Population (MOH&P) and WHO. It was Egypt's monitoring and rapid virological analysis conducted at the Central Public Health Laboratory in Cairo that initially allowed the diagnoses of H5N1 to be made. Confirmatory testing and genetic sequencing was done at NAMRU-3 and at two WHO Collaborating Centers located in Atlanta, USA and London, UK.

At this time there is no indication that oseltamivir resistance is widespread in Egypt or elsewhere. WHO is not making any changes in antiviral [treatment recommendations](#) for H5N1-infected persons published in June 2006 because the clinical level of resistance of these mutations is not yet well established. Current laboratory testing suggests that the level of reduced susceptibility is moderate. This mutation has previously been identified in Viet Nam in one case in 2005. Moreover, these mutations are not associated with any known change in the transmissibility of the virus between humans. Based on these considerations, the public health implications at this time are limited. Finally, these findings do not indicate a need for a change in phase level. The WHO pandemic preparedness level remains at three. The Egyptian authorities,

WHO and its Collaborating Centers will continue to share with the public all relevant information from the on-going investigations and analyses as soon as it becomes available.

International, Poultry (ProMed via Associated Press, January 20): South Korean quarantine officials are set to slaughter 273,000 poultry after an outbreak of the deadly H5N1 strain of bird flu, the Agriculture Ministry and health officials said January 20, 2007.

The outbreak occurred at a chicken farm in Cheonan, about 60 miles south of Seoul, earlier this week, the 5th such outbreak since November 2006, said Lee Joo-won, a ministry official.

"We plan to start slaughtering 273 000 poultry within a 500-meter radius of the outbreak site and destroying eggs as early as Saturday evening," Lee said.

The ministry also said it will make a decision on whether to kill another 386,000 poultry on January 21, while limiting the movement of about 2.16 million chickens and ducks from 90 farms within a 6-mile radius of the outbreak. South Korea culled 5.3 million birds during the last known outbreak of bird flu in 2003. The H5N1 virus began ravaging Asian poultry stocks in late 2003 and has killed more than 160 people worldwide. Most human cases have resulted from contact with infected birds. Scientists fear the virus could mutate into a form that is more easily transmitted between people, possibly creating a pandemic that could kill millions.

International, Poultry (Associated Press, January 20): Indonesian authorities slaughtered thousands of backyard chickens and pet birds Sunday to halt the spread of bird flu that has killed five people in the country in two weeks. Edi Setiarto, a leading animal health official in Jakarta, said around 10,000 chickens, ducks quail and doves would be culled Sunday, part of a campaign to rid the capital of around a million birds by the end of January. The birds being cleared in recent days were voluntarily handed over by owners, but from February authorities have vowed to involuntarily clear potentially infected poultry. On Sunday, healthy birds were slaughtered and the carcasses returned to the owners to be eaten or sold, while infected animals were killed and burned.

The most recent human casualty was on Friday, when a woman died of avian influenza, the fifth fatal case since Jan. 9. Before that, Indonesia had not recorded a single infection for six weeks - a lull that led some Indonesian officials to say they were succeeding in beating the disease. But others warned that with winter flu season here, authorities should remain vigilant. There are an estimated 350 million backyard chickens in Indonesia, many of them being kept outside houses in the capital and surrounding towns. The health minister said last week that nine other provinces hard-hit by bird flu would also soon ban chickens from residential areas. Bird flu remains hard for humans to catch. But international experts fear it may mutate into a form that could spread easily between humans and potentially kill millions around the world, including in wealthy nations that have so far been spared human cases.

International, Poultry (Reuters, January 23): Japanese authorities are checking if bird flu killed more than 200 chickens at a poultry farm in southwestern Japan, the Agriculture Ministry said on Tuesday. If confirmed, it would be the second outbreak this month of the H5N1 bird flu virus, which can be fatal to humans. The farm, which has about 50,000 birds, is situated in Hyuga in Miyazaki Prefecture, where 10 days ago the government confirmed an H5N1 outbreak - Japan's first such case in three years. Miyazaki, on the southernmost main island of Kyushu, is the country's top breeder of chickens. In the latest suspected outbreak, 243 chickens had died on Monday, the Agricultural Ministry and Miyazaki government said. Kyodo news agency said about 570 had died on Monday and Tuesday, but a Miyazaki official would not confirm that figure. A simple preliminary test for H5N1 showed positive for some birds, but more tests were needed for final confirmation. In the earlier outbreak, the government imposed a 10-km quarantine zone around the infected farm, banning shipments of eggs and chickens to areas outside the zone.

International, Poultry (Dow Jones Newswire, January 23): A fresh outbreak of virulent bird flu has been found in hens in northeastern Thailand, a livestock official said Tuesday. The outbreak of the H5N1 virus was confirmed by laboratory tests after the deaths of about 200 chickens were reported in Nong Khai province last week, said Nirand Uaebumrungsut, a veterinarian with the Agriculture Ministry's Department of Livestock Development. Last week, livestock officials reported the country's first outbreak in almost six months of H5N1, in ducks in the northern Thai province of Phitsanulok.

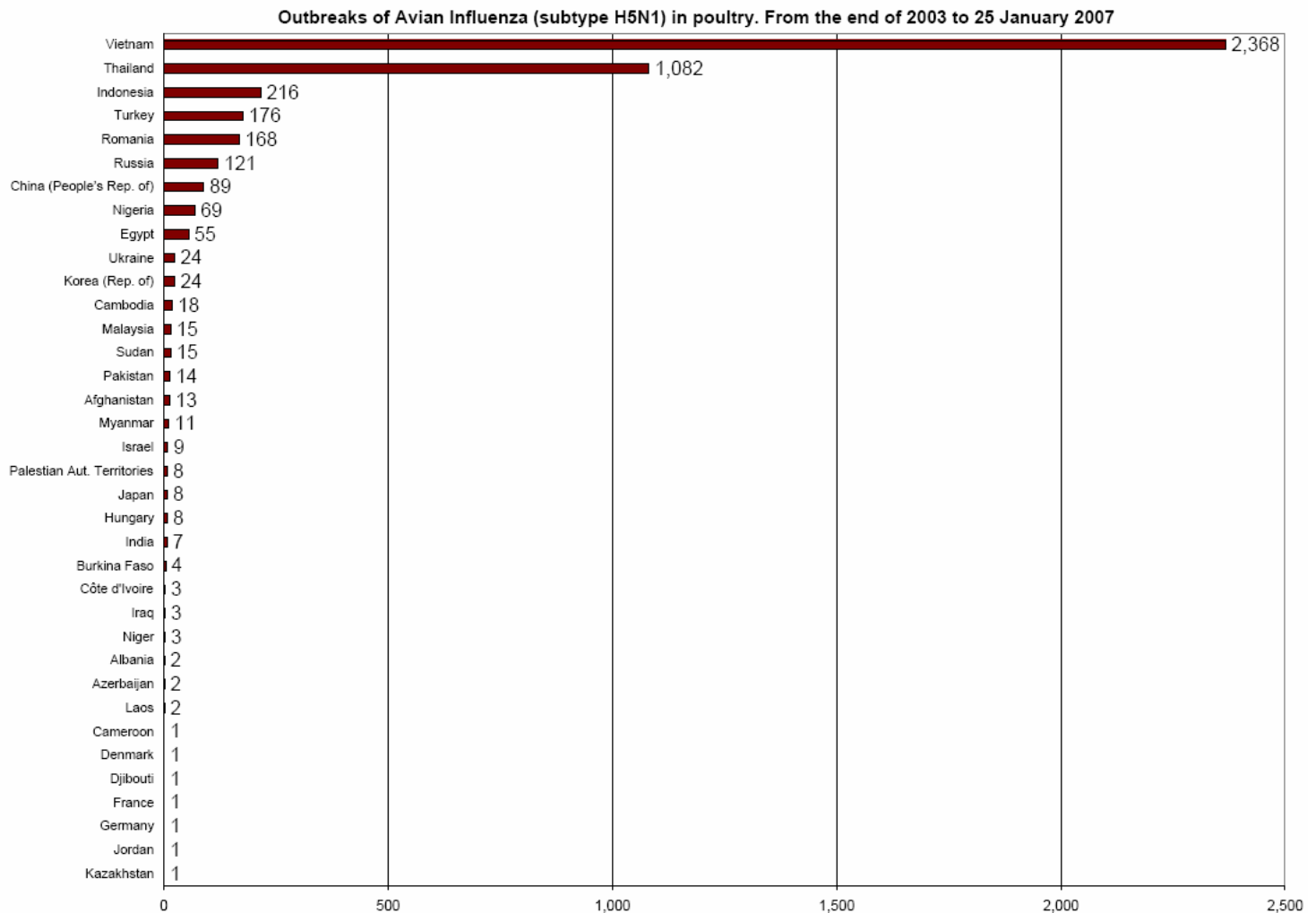
International, Poultry (Associated Press, January 25): Hungarian laboratories have detected the presence of the deadly strain of H5N1 bird flu virus, the agriculture ministry said Tuesday. "Bird flu tests have shown a high pathogenic H5 type, which looking at previous test results, belongs to the deadly N1 strain," the ministry said in a statement. The ministry said it would send samples to the official European Union lab at Weybridge, England for further tests. Hungary has also notified EU officials about Wednesday's test results. Earlier this week, some 30-40 geese - discovered on a farm in southeastern Hungary dead or showing signs of damaged nervous systems - were suspected of having been infected by the deadly H5N1 bird flu virus. By Tuesday, the farm's 3,300 birds were culled. The ministry said normal preventive measures to avoid the spread of the disease were in place. Further measures will not be taken and additional culling is unnecessary, the statement said. Hungary's first case of H5N1, detected in February 2006, was found to be carried by wild birds including swans and gray geese, while the deadly virus was first found in domestic poultry

International, Wild Birds (Associated Press, January 22): Three dead birds found earlier in Hong Kong have tested positive for the deadly H5N1 strain of bird flu, the government said Monday. The three birds were a Japanese white-eye, a house crow and a white-backed munia, the government said in a statement. All three were found in Hong Kong's Kowloon peninsula, which adjoins the Chinese mainland. Bird flu has killed or prompted the culling of millions of birds across Asia since 2003. Hong Kong hasn't reported a major outbreak since 1997, although there have been occasional cases of the disease. Hong Kong has detected sporadic cases in dead birds this year since a dead scaly-breasted munia tested positive earlier this month, but there is no sign the disease has crossed over to humans, and the cases haven't sparked public panic. Hong Kong tested 11,000 birds for the H5 strain of bird flu in 2006 and 17 were positive. The territory aggressively tests for bird flu because of the outbreak in 1997, when the disease jumped to humans and killed six people. That prompted the government to slaughter the entire poultry population of about 1.5 million birds.

Michigan Wild Bird Surveillance (USDA, January 19): According to the National HPAI Early Detection Data System website, available at <http://wildlifedisease.nbi.gov/ai/>, Michigan has results for a total of 2182 samples, from both wild birds and the environment, submitted for testing as of January 5th. 470 of these were live-captured birds, 1207 were hunter-killed, 123 were sentinel animals, 175 were dead birds that were submitted for testing, and 207 were environmental samples. HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 71,825 birds or environmental samples tested nationwide.

To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's Emerging Disease website at <http://www.michigan.gov/emergingdiseases>.

Please contact Susan Vagasky at VagaskyS@Michigan.gov with any questions regarding this newsletter or to be added to the weekly electronic mailing list.

Table 1. H5N1 Influenza in Poultry (Outbreaks up to January 25, 2007)(Source: http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 1/25/2007)**Table 2. H5N1 Influenza in Humans (Cases up to January 22, 2006)**

(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2006_06_06/en/index.html Downloaded 1/23/2007)

Cumulative number of confirmed human cases of Avian Influenza A(H5N1) reported to WHO. The total number of cases includes number of deaths. WHO only reports laboratory-confirmed cases.

Country	2003		2004		2005		2006		2007		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	0	0	6	6
China	1	1	0	0	8	5	13	8	0	0	22	14
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	1	1	19	11
Indonesia	0	0	0	0	19	12	56	46	5	4	80	62
Iraq	0	0	0	0	0	0	3	2	0	0	3	2
Thailand	0	0	17	12	5	2	3	3	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	0	0	93	42
Total	4	4	46	32	97	42	116	80	6	5	269	163